

contemplated as falling within the scope of the invention as defined by the appended claims and equivalents thereto.

What is claimed is:

1           1.       An apparatus for generating a computer numerically controlled program, the  
2 apparatus comprising:

3                   a specifier module having a first input that receives data defining a  
4 characteristic of a piece of equipment, a second input that receives data defining a desired  
5 characteristic of a seal for use in the piece of equipment, and an output that provides a profile  
6 of a seal that is compatible with the piece of equipment; and

7                   a computer numerically controlled program generator, having an input that  
8 receives the profile of the seal and an output that provides a computer numerically controlled  
9 program for machining an element of the seal based upon the profile of the seal, so that the  
10 seal is compatible with the piece of equipment.

1           2.       The apparatus of claim 1, further comprising a seal design module that  
2 receives the profile of the seal and an output that provides dimensions based upon the profile  
3 of the seal, the dimensions defining the seal such that the seal is compatible with the piece  
4 of equipment.

1           3.       The apparatus of claim 2, wherein the seal design module further provides at  
2 least one custom manufacturing print for the seal that is compatible with the piece of  
3 equipment.

1           4.       The apparatus of claim 1, further comprising a proposal generator that  
2 provides a proposal for manufacturing the seal so that the seal meets the desired  
3 characteristic and fits the piece of equipment.

1           5.       The apparatus of claim 4, wherein the proposal includes at least one of price  
2 information, modification notes, warnings, a bill of materials, an order form, a dimension  
3 verification form, and a plant standardization survey.

1           6.       The apparatus of claim 1, wherein the piece of equipment includes a pump.

1           7.       The apparatus of claim 6, wherein the data defining the characteristic of the  
2 piece of equipment includes an identification of a process fluid for the pump.

1           8.       The apparatus of claim 1, wherein the data defining the characteristic of the  
2 piece of equipment includes dimensions that describe the piece of equipment.

1           9.       The apparatus of claim 1, wherein the data defining the characteristic of the  
2 piece of equipment includes a description of an environmental operating condition of the  
3 piece of equipment.

1           10.      A computer operated method for generating a computer numerically  
2 controlled program, the method comprising the steps of:  
3                    receiving a first input defining a characteristic of a piece of equipment;  
4                    receiving a second input defining a desired characteristic of a seal for use in  
5 the piece of equipment; and  
6                    automatically generating a computer numerically controlled program for  
7 machining an element of the seal based upon the first input and the second input, so that the  
8 seal is compatible with the piece of equipment.

1           11.      The method of claim 10, further comprising a step of generating dimensions  
2 based upon the first input and the second input, the dimensions defining a seal that is  
3 compatible with the piece of equipment.

1           12.      The method of claim 11, further comprising a step of generating at least one  
2 custom manufacturing print for the seal that is compatible with the piece of equipment.

1           13.      The method of claim 10, further comprising a step of generating a proposal  
2 for manufacturing the seal that meets the desired characteristic and fits the piece of

3 equipment.

1 14. The method of claim 13, wherein the proposal includes at least one of price  
2 information, modification notes, warnings, a bill of materials, an order form, a dimension  
3 verification form, and a plant standardization survey.

1 15. The method of claim 10, wherein the piece of equipment includes a pump.

1 16. The method of claim 15, wherein the characteristic of the piece of equipment  
2 includes an identification of a process fluid for the pump.

1 17. The method of claim 10, wherein the characteristic of the piece of equipment  
2 includes dimensions that describe the piece of equipment.

1 18. The method of claim 10, wherein the characteristic of the piece of equipment  
2 includes a description of an environmental operating condition of the piece of equipment.

1 19. An apparatus for generating a computer numerically controlled program, the  
2 apparatus comprising:

3 means for receiving a first input defining a characteristic of a piece of  
4 equipment;

5 means for receiving a second input defining a desired characteristic of a seal  
6 for use in the piece of equipment; and

7 means for generating a computer numerically controlled program for  
8 machining an element of the seal based upon the first input and the second input, so that the  
9 seal is compatible with the piece of equipment.

1 20. The apparatus of claim 19, further comprising means for generating  
2 dimensions based upon the first input and the second input, the dimensions defining a seal

3 that is compatible with the piece of equipment.

1 21. The apparatus of claim 20, further comprising means for generating at least  
2 one custom manufacturing print for the seal that is compatible with the piece of equipment.

1 22. The apparatus of claim 19, further comprising means for generating a proposal  
2 for manufacturing the seal that meets the desired characteristic and fits the piece of  
3 equipment.

1 23. The apparatus of claim 22, wherein the proposal includes at least one of price  
2 information, modification notes, warnings, a bill of materials, an order form, a dimension  
3 verification form, and a plant standardization survey.

1 24. The apparatus of claim 19, wherein the piece of equipment includes a pump.

1 25. The apparatus of claim 24, wherein the characteristic of the piece of  
2 equipment includes an identification of a process fluid for the pump.

1 26. The apparatus of claim 19, wherein the characteristic of the piece of  
2 equipment includes dimensions that describe the piece of equipment.

1 27. The apparatus of claim 19, wherein the characteristic of the piece of  
2 equipment includes a description of an environmental operating condition of the piece of  
3 equipment.

1 28. An apparatus for generating a computer numerically controlled program,  
2 comprising:  
3 a database of templates of computer numerically controlled programs,  
4 specifying operations for a program for machining an element, without dimensional

information; and

a computer numerically controlled program generator, having an input that receives the profile of the seal and templates from the database of templates for the seal, and an output that provides a computer numerically controlled program for machining an element of the seal based upon the profile of the seal, so that the seal is compatible with the piece of equipment.

29. A method for making a mechanical seal, comprising the steps of:  
preparing templates of computer numerically controlled programs, specifying operations for a program for machining an element, without dimensional information; and  
receiving a profile of a seal and the templates for the seal; and  
generating a computer numerically controlled program for machining an element of the seal based upon the profile of the seal, so that the seal is compatible with the piece of equipment.

30. A computer system for facilitating identification of equipment for matching with a seal, comprising:  
a graphical user interface for displaying a template having fields and for receiving inputs in the fields and defining dimensions of the equipment, wherein the graphical user interface associates graphical information illustrating how to obtain the information with the fields in the templates, wherein the graphical user interface verifies the completeness and type of data in each field in the template; and  
means for providing dimensional verification information indicating expected dimensions for each of the fields in the template.